14. (New) An intermittent drive control apparatus of a motor according to claim 4, wherein

the braking time interval calculator calculates first and second average speeds based on first and second detection signal pairs which are not consecutive in a sequence of the rotation detection signals, calculates the speed deceleration rate based on the first and second average speeds, and calculates a plurality of average speeds by using one rotation detection signal occurring between rotation detection signals forming the first detection signal pair as one of rotation detection signals of the second detection signal pair.

15. (New) An intermittent drive control apparatus of a motor according to claim 12, wherein

the braking time interval calculator uses a rotational speed of the motor at time of braking start as one of average speeds used for calculation of the speed deceleration rate.

16. (New) An intermittent drive control apparatus of a motor according to claim 9, further comprising braking time interval calculator for setting the braking time interval equal to a value which is longer than the time calculated by the braking time calculation means by a predetermined time interval, when re-supplying a current of the same rotation direction as that before braking start, after stop of the motor.--

REMARKS

By the present Preliminary Amendment, the specification has been amended and proposed drawing changes are submitted to correct for minor informalities in the present application. Additionally, the present Preliminary Amendment adds Claims 9-16. New Claims 9-16 are fully supported by the specification, including the claims, as originally filed and are not believed to raise an issue of new matter.

In view of the above, Applicants respectfully submit that this application containing Claims 1-16 is in condition for a full and thorough examination on the merits.

Respectfully submitted,

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IN THE SPECIFICATION

Please amend the specification as follows:

Replace the paragraphs on page 4, lines 4-19, with the following text:

--[FIG. 4 shows] FIGS. 4A-4G show signal waveforms of various locations at the time of intermittent drive.

It is now assumed that start of the motor is begun at time t0. At this time, a motor current [(F)] FIG. 4F is supplied with a fixed value [(Is in FIG. 4)] by current limit value command information [(E)] FIG. 4E so as to increase the rotation at desired acceleration. A motor speed [(G)] FIG. 4G increases at fixed acceleration as shown in FIG. 4G. When the motor speed [(G)] FIG. 4G arrives at a desired value W0 (time t1), rotational speed control is applied in order to keep the fixed speed.

An interval between time t0 and t1 is called start interval (a start time interval is Ts). Shift to the fixed speed state is conducted on the basis of the speed information fed from the speed detector 21, and error command information [(A)] FIG. 4A is supplied to the motor drive circuit 24. As a result, the motor current changes, resulting in a fixed speed state.--

Replace the paragraph bridging pages 4 and 5 with the following text:

--When the control signal [(B)] FIG. 4B is detected in the fixed speed interval (at, for example, t5), the speed W0 is kept further for a time interval (TD) on the basis of tracking information, and then shift to braking operation is conducted (time t2) . The braking

operation is conducted by supplying forward/reverse rotation command information [(D)] FIG. 4D to the motor drive circuit 24 and switching the motor current over to an opposite direction. At this time, the motor current [(F)] FIG. 4F is prescribed (to become IB in FIG. 4F) by the current limit value command information [(E)] FIG. 4E so as to decrease the rotational speed of the motor at a fixed rate. If braking operation were kept, the motor would conduct reverse rotation operation after stop. The moment an opposite direction rotation detection output (reverse rotation detection signal [(C)] FIG. 4C is obtained from the rotation direction detector 22 (at time t3), therefore, the forward/reverse rotation command [(D)] FIG. 4D is changed so as to order a forward rotation. At the same time, a current is applied in the forward rotation direction again for a short time in order to cancel the rotational inertia of the motor. As a result, rotatory power of the forward rotation direction is generated. The reverse rotation energy is thus absorbed completely, and complete stop is obtained. This is so-called re-acceleration. A re-acceleration time interval is TR, which is an interval between t3 and t4. (As a matter of fact, the motor is in the stop state.)--

Replace the title on page 7, line 2, with the following text:

[Disclosure of the Invention]

--SUMMARY OF THE INVENTION--.

Replace the paragraph on page 8, lines 14-15, with the following text:

--[FIG. 4 is a] FIGS. 4A-4G are timing [chart] charts showing operation of the related technique of FIG. 3.--

Replace the title on page 8, line 16, with the following text and added paragraph:

[Best Mode for Carrying Out the Invention]

--DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Other features of the invention will become apparent in the course of the following descriptions of exemplary embodiments which are given for illustration of the invention and are not intended to be limiting thereof.--

Replace the paragraph on page 8, lines 17-22, with the following text:

--Hereafter, an embodiment of the present invention will be described in detail by referring to drawing. Referring now to the drawings, therein like reference numerals designate identical or corresponding parts throughout the several views, and more particularly to Figure 1 thereof, FIG. 1 is a block diagram showing an embodiment of an intermittent drive control apparatus of a motor according to the present invention. In FIG. 1, the same components as those of FIG. 3 are denoted by like characters.--

Please insert new paragraph on page 23, after the paragraph beginning on lines 22-27.

Please delete page 24 in its entirety.

IN THE CLAIMS

Please add new Claims 9-16.

FIG.4

FIG. 4A (A) ERROR COMMAND

FIG. 4B (B) CONTROL SIGNAL

FIG. 4C (C) REVERSE ROTATION DETECTION

FIG. 4D (D) FORWARD/ REVERSE ROTATION COMMAND

FIG. 4E (E) CURRENT LIMIT VALUE COMMAND

FIG. 4F (F) MOTOR CURRENT

FIG 4G (G) MOTOR SPEED